# TITLE System And Method For Manipulating An Image On A Screen INVENTOR: Peter Alexander Gross HP PDNO. 70006210-1



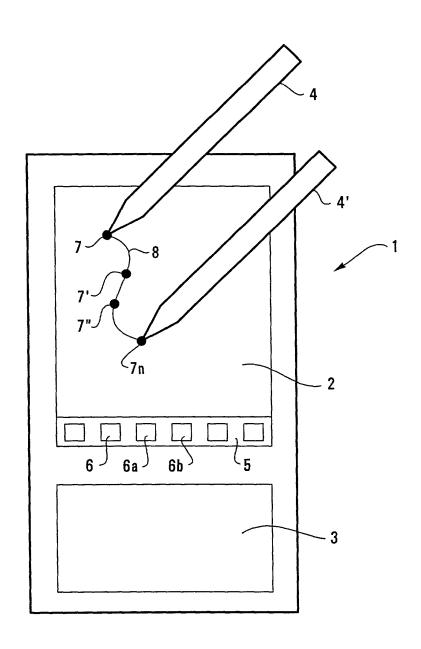


Figure 1

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Table 1	
Relation	Formula
Linear	y = m(x-h) + k
Quadratic	$y = a(x-h)^2 + k$
Circle	$(x-h)^2 + (y-k)^2 = r^2$
Ellipse	$(x-h)^2/a^2 + (y-k)^2/b^2 = 1$
Hyperbola1	$(x-h)^2/a^2 - (y-k)^2/b^2 = 1$
Hyperbola2	$(y-k)^2/b^2 - (x-h)^2/a^2 = 1$
Parabola1	$y = a(x - h)^2 + k$
Parabola2	$(y-k)^2 = c(x-h)$
Exponential1	$y = b \cdot a^x + k$
Exponential2	$y = b \cdot e^{ax} + k$
Logarithmic	$y = b \cdot \ln(a(x - h)) + k$
Power	$y = a(x - h)^r + k$
Sine	$y = b \cdot \sin(a(x - h)) + k$
Cosine	$y = b \cdot \cos(a(x - h)) + k$

Figure 2

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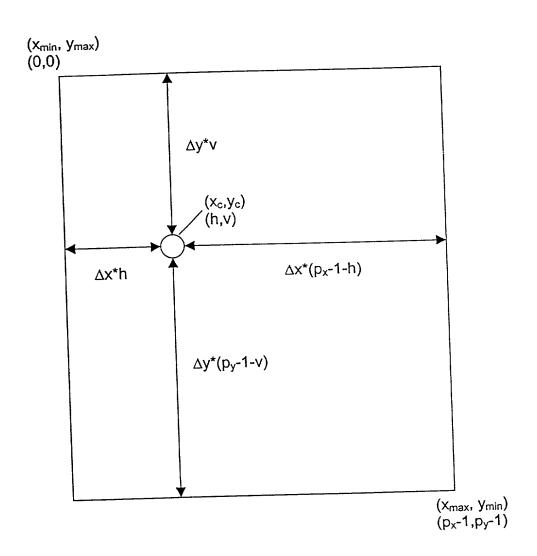


Figure 3

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Zoom Icon Event Stylus Event? Yes Determine Pixel Point S30 (h,v) Indicated by Stylus S40 Determine Screen Point (x<sub>c</sub>,y<sub>c</sub>) Corresponding to Pixel Point Get Zoom Factor Recalculate Cartesian Coordinate S60 Screen Boundaries in accordance with zoom factor and keeping screen point (x<sub>c</sub>,y<sub>c</sub>) fixed Recalculate Graph or S70 Graphs for the domain within the Screen Boundaries S80 Redraw graph or graphs on the screen

Figure 4

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#### O. User initiates dynamic zoom

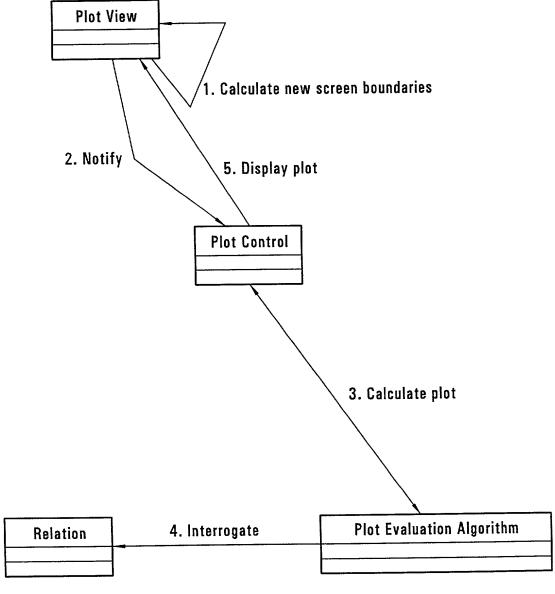
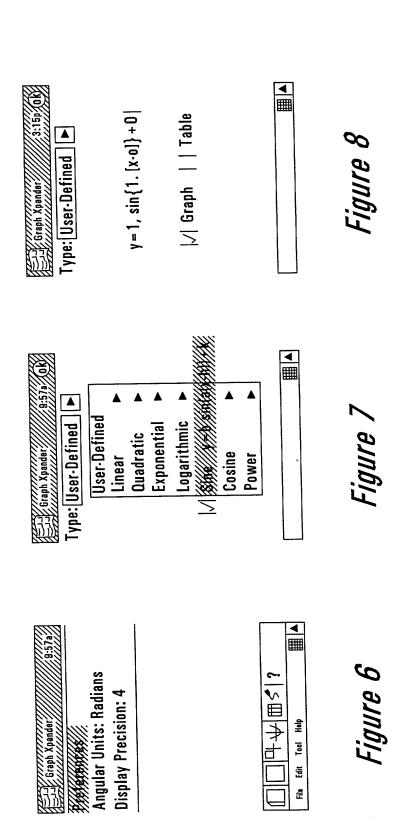


Figure 5

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first fifth fifth with tell, with their their first first first first first first first first and the first first first first first add

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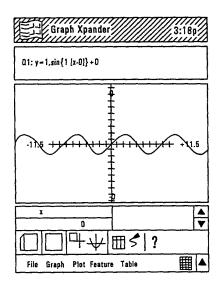


Figure 9

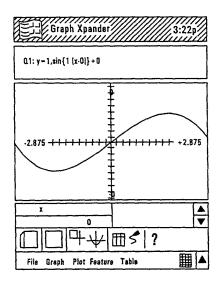


Figure 11

Figure 10

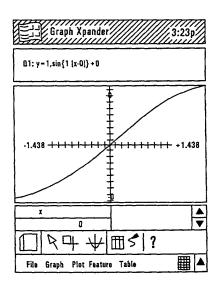


Figure 12